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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,250	07/09/2001	Joseph P. Tunney	47440-042000	8638

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EXAMINER

CHAUDHRY, SAEED T

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 05/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.	Applicant(s)	
09/901,250	TUNNEY ET AL.	
Examiner	Art Unit	
Saeed T Chaudhry	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-21 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-21 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3-15-04
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 15, 2004 has been entered.

Double Patenting

Claims 1, 2, 4, 5, 11, 12 and 13 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 9, 10, 16, 17, 18 of U.S. Patent No. 6,443,166 in view of Brown.

US Patent No. 6,443,166 discloses to clean containers with nitrogen gas and venting the nitrogen gas/chemical mixture to a flare but fails to clean containers having sulfur dioxide gas or chlorine gas and neutralize with neutralizing material such as sodium hydroxide.

Brown (5,017,240) discloses a method for the removal and recovery of hydrocarbon from bulk oil or gasoline storage tanks. The air/vapor discharged from the tank is treated by the treatment facility 16 of the invention which is illustrated to the right of the tank 10 in FIG. 1. The treatment facility 16 comprises a blower 14, several condenser vessels 18, 20 and 22, a caustic wash vessel 24 and a solid absorbent treatment vessel 26 (see col. 3, lines 20-25).

The bulk storage tank is evacuated with a conventional blower 14 having a capacity from 1000 to about 5000 cubic feet per minute and the air/vapor mixture is discharged into the first stage 34 of the treatment facility. This stage employs a caustic wash treatment in vessel 24

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in which the air/vapor mixture is passed counter-current to a spray of caustic, typically aqueous solutions of about 30 weight percent sodium hydroxide to remove sulfur compound from the air/vapor mixture such as mercaptans, hydrogen sulphate, sulfur dioxide and the like. The caustic solution is effective in removing the sulfur compounds which remain dissolved in the liquid and accumulate in the caustic wash tank 36 (see col. 3, lines 39-52). The nitrogen can be introduced to the bulk petroleum storage tank 10 as a source of the flush gas therein by discharging it into the air recycle line 76 (see col. 4, lines 36-41). The dehumidified mixture is passed to the second condensation stage within vessel 20, through line 48. In vessel 20, the air/vapor and nitrogen mixture is mixed with cold nitrogen gas supplied through line 69 which, as described above, is sufficient to cool the mixture to a temperature of about -40.degree. F (see col. 5, lines 3-8). Usually from two to about ten volumes of fresh air per volume of air/vapor mixture within the tank must be introduced as flushing air into the tank before the level of hydrocarbons in the vapor space of the tank is at a sufficiently safe level for workmen (see col. 3, lines 10-15).

It would have been obvious at the time applicant invented the claimed process to utilize the process of Brown into the process of (6,443,166) patent to neutralize spent gas with sodium hydroxide rather than sending the gas/chemical mixture to a flare to reduce the cost of the process of incineration and to use cheap sodium hydroxide for neutralization. Further one would use neutralizing process over incineration since by incinerating gas/chemical mixture still pollute the environment.

The non-statutory double patenting rejection, whether of the obvious-type or non-obvious-type, is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent. *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA

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1969); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Van Ornam*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); and *In re Goodman*, 29 USPQ2d 2010 (Fed. Cir. 1993).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321 (b) and © may be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.78 (d).

Effective January 1, 1994, a registered attorney or agent of record may sign a Terminal Disclaimer. A Terminal Disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made

The factual inquiries set forth in *Graham v. John Deere Co.*, 148 USPQ 459, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or unobviousness.

**Claims 1-5, 7-21 and 24 are rejected under 35 U.S.C. § 103 as being unpatentable over Brown in view of Bombard, Stodolka and Sinha et al.**

Brown (5,017,240) discloses a method for the removal and recovery of hydrocarbon from bulk oil or gasoline storage tanks. The air/vapor discharged from the tank is treated by the treatment facility 16 of the invention which is illustrated to the right of the tank 10 in FIG. 1. The treatment facility 16 comprises a blower 14, several condenser vessels 18, 20 and 22, a caustic wash vessel 24 and a solid absorbent treatment vessel 26 (see col. 3, lines 20-25).

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The bulk storage tank is evacuated with a conventional blower 14 having a capacity from 1000 to about 5000 cubic feet per minute and the air/vapor mixture is discharged into the first stage 34 of the treatment facility. This stage employs a caustic wash treatment in vessel 24 in which the air/vapor mixture is passed counter-current to a spray of caustic, typically aqueous solutions of about 30 weight percent sodium hydroxide to remove sulfur compound from the air/vapor mixture such as mercaptans, hydrogen sulphate, sulfur dioxide and the like. The caustic solution is effective in removing the sulfur compounds which remain dissolved in the liquid and accumulate in the caustic wash tank 36 (see col. 3, lines 39-52).

The nitrogen can be introduced to the bulk petroleum storage tank 10 as a source of the flush gas therein by discharging it into the air recycle line 76 (see col. 4, lines 36-41). The dehumidified mixture is passed to the second condensation stage within vessel 20, through line 48. In vessel 20, the air/vapor and nitrogen mixture is mixed with cold nitrogen gas supplied through line 69 which, as described above, is sufficient to cool the mixture to a temperature of about -40.degree. F (see col. 5, lines 3-8). Usually from two to about ten volumes of fresh air per volume of air/vapor mixture within the tank must be introduced as flushing air into the tank before the level of hydrocarbons in the vapor space of the tank is at a sufficiently safe level for workmen (see col. 3, lines 10-15). The reference fails to disclose 1) heating the input gas 2) to check for the leak 3) providing a control panel 4) temperature of the circulating gas 5) container being a rail tank car and 6) the container having a chlorine gas.

Bombard (5,168,709) discloses a fuel tank drying and ventilation system for reducing the fuel vapor level from residual fuel in an emptied fuel tank so that the fuel tank may be safely entered by maintenance personnel (see col. 1, lines 7-12). The fuel tank drying and ventilation

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system of the invention establishes a closed loop air circulation path through the tank. A blower in the path suctions air from the tank, and air is passed through a vapor recovery unit which has a cooling section and a reheated section. After the air is chilled in the cooling section, it is passed through the reheated section and redirected back through the fuel tank to evaporate residual fuel in the tank, the evaporation being enhanced by the heat content of the reheated air (see col. 2, lines 4-20).

In order to test the integrity of the sealed system, a test mode is employed. The valve means closes the outlet from the tank and opens an air inlet to the blower so that the blower applies a test pressure to the path, and the pressure within the path is monitored (see col. 3, lines 1-5).

Temperature sensor 156 monitors the temperature of air entering fuel tank 32 to ensure that the flashpoint of saturated Jet A vapor (about 140.degree. F.) is not approached. A maximum temperature in the range of 120.degree.-130.degree. F. is selected for control of alarm 158 which may be an alarm light or horn (see col. 7, lines 28-30). A flow control means, when said system is in a recirculation mode, for establishing a closed loop air circulation path through said tank (see claim 1).

Stodolka (4,597,803) discloses a process for cleaning vessels containing liquid sulfur dichloride. Sulfur dichloride is commercially shipped in liquid form in steel railroad tank cars. The sulfur dichloride is removed from the tank car through an opening in the top of the car leaving a mixture of liquid sulfur dichloride and solid material on the bottom of the tank car. (See col. 1, lines 30-34). The contents of the vessel are then heated in the presence of an inert gas to vaporize the liquid remaining in the vessel leaving a solid residue. The vapor is pumped from

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the vessel and neutralized by reaction with a base, and the solid residue is removed from the bottom of the vessel. (See col. 2, lines 10-16).

As liquid sulfur dichloride is drained from the car, it flows into a receiver. The liquid sulfur dichloride, which can contain some dissolved chlorine, is primarily isolated in the receiver. Vapors and droplets are conveyed under vacuum to the scrubber. Chlorine and any sulfur dichloride contained in the liquid are neutralized in the scrubber by reaction with a suitable base such as sodium hydroxide, potassium hydroxide, calcium hydroxide, etc. The expression "neutralized" as used in this specification and appended claims is intended to denote the reaction of liquid or gaseous materials from the vessel with a basic material (see col. 2, lines 65-68 and col. 3, lines 1-8).

Sinha et al (4,215,096) disclose removal of acidic contaminants from gas streams by caustic impregnated activated carbon. A process for the removal of chlorine from gas streams which comprises contacting the gas stream with activated carbon impregnated with about 0.5 to about 20 percent by weight sodium hydroxide and about 4 to about 50 percent by weight of moisture (See abstract and claim 1).

It would have been obvious at the time applicant invented the claimed process to incorporate the cited steps of Bombard namely heating the gas prior to injection into the container and check the container for leak into the process of Brown. This is because Bombard discloses that the evaporation being enhanced by the heat content of the reheated air (see col. 2, lines 4-20) and pressure is applied to the system to check the integrity of the sealed system. One of ordinary skill in the art would use control panel as disclosed by Bombard for easy manipulation of the system input and output of the gas. Bombard discloses to heat the air up to



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130 degree F. Therefore, one of ordinary skill in the art would manipulate the temperature of the recirculation gas to optimize the evaporation process. Further one would manipulate the valves to stop and open the container as desired for better and efficient results.

It would have been obvious at the time applicant invented the claimed process to remove chlorine gas from a rail car as disclosed by Stodolka and then treat the gas with sodium hydroxide to neutralize as disclosed by Sinha et al with the process of Brown for removal of the chlorine gas. Since chlorine gas is powerful irritant to the workers exposed to it while working with the containers. Therefore, it is advantageous to remove the chlorine gas and reduce it's concentration below 0.5 ppm from the containers before a worker can enter for well being of the workers.

Brown was discussed supra. However, the reference fails to disclose that sulfur dioxide concentration is about 2.00 ppm or below.

Brown discloses that the volume of air/vapor mixtures which must be vented and treated from such tanks is from 18,000 to about 50,000 cubic feet. Therefore it is believe that after venting with this size of volume would reduce the concentration of sulfur dioxide to 2.00 ppm, or below.

### ***Response to Applicant's Arguments***

The applicant argued that the prior art fails to teach injecting a quantity of dry and heated input gas to vaporize the sulfur dioxide gas or chlorine present in the system and to form input gas/chemical mixtures. Brown, in fact, teaches the air/vapor mixture is dehumidified after removal from the tank, not prior to injecting any of the input gas into the tank. Bombard also

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teaches that the removal of the water from the air/vapor mixture occurs after removal of the air/vapor mixture from the tank, not prior to adding the air to the tank.

These arguments are not persuasive because Bombard discloses that after the air is chilled in the cooling section, it is passed through the reheated section and redirected back through the fuel tank to evaporate residual fuel in the tank, the evaporation being enhanced by the heat content of the reheated air (see col. 2, lines 4-20).

The applicant argued that it is important in the present invention that the input gas be both dry and heated prior to entering the railcar and mixing with the chemical.

This argument is unpersuasive because Bombard suggest to reheat the air to redirect into the tank. Therefore, the air is dry since it is heated to 120° F to 130° F and before heating water is removed by cooling.

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD

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FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

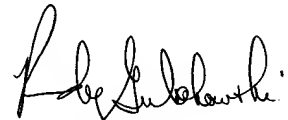
*Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saeed T. Chaudhry whose telephone number is (571) 272-1298. The examiner can normally be reached on Monday-Friday from 9:30 A.M. to 4:00 P.M.*

*If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Randy Gulakowski, can be reached on (571)-272-1302. The fax phone number for non-final is (703)-872-9306.*

*When filing a FAX in Gp 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are for entry into the file of the application. This will expedite processing of your papers.*

*Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-1700.*

*Saeed T. Chaudhry  
Patent Examiner  
May 12, 2003*

A handwritten signature in black ink, appearing to read 'Randy Gulakowski', is positioned above the printed name and title.

RANDY GULAKOWSKI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700